DOE Site:	Y-12 & ORNL, Oak Ridge, TN
EM Project:	Integrated Facility Disposition Project (IFDP)
ETR Report Date:	August 2008

ETR-15

External Technical Review Summary

United States Department of Energy Office of Environmental Management (DOE-EM)

External Technical Review of the Major Risk Factors Integrated Facility Disposition Project (IFDP) Oak Ridge, TN

Why DOE-EM Did This Review

Approximately two million pounds of mercury are unaccounted for at Y-12 and mercury contamination has been detected in both soils and groundwater. The IFDP will provide remediation of legacy contamination at the Oak Ridge National Laboratory (ORNL) and the Y-12 National Security Complex. The broad scope includes: 1) facility reconfiguration; 2) D&D (characterization, deactivation, decommissioning, decontamination, demolition, waste management, and disposition of excess facilities and equipment); 3) remediation of contaminated soil, ground and surface water; 4) disposition of legacy materials; and 5) landfill closure. *The objective was to review IFDP major risk factors: (1) Treatment and Disposal of large quantities of Mercury Contaminated Soil and Debris, and (2) Technical Approaches related to Facility Reconfiguration for Radioactive Waste and Low Level Liquid Waste Management.*

What the ETR Team Recommended

- Perform characterization leading to high confidence projection of mercury contaminated debris/soil waste volumes by utilizing innovative, proven and accurate methods. This projection is critical to ensuring that treatment technologies and facilities (including existing facilities) are sufficient and available.
- Develop clear, achievable metrics for mercury remediation activities. Integrate disposition of debris with similar characteristics to improve efficiency and costs effectiveness. Presume macro encapsulation of Alpha 4 debris.
- Proceed with CERCLA commitments in a disciplined but expeditious manner balancing the need for progress with continued need for processing buildings and the need to remediate beneath D&D planned structures.
- Develop waste acceptance criteria critical for stakeholder support for on-site disposal of mercury contaminated waste.
- Increase security requirements and improve assessments of risk mitigating actions for worst case safety, security, and programmatic cost and schedule impacts.

What the ETR Team Found

Overall, the ETR Team concluded there were no severe technical issues that would need to be resolved prior to continued programmatic consideration of the IFDP. Several observations were considered "overarching" in that they apply across the IFDP. These are

(1) IFDP appears to characterize the overall level of risk in a manner appropriate for the current stage of the project

(2) The strategic approach to integrate multiple DOE programs in addressing environmental management issues is commendable and (3) Addressing legacy waste and facilities issues as soon as practicable should assist in optimizing the total cost magnitude, risk reduction, and schedule duration.

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http://www.em.doe.gov/Pages/ExternalTechReviews.aspx

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The purpose of an External Technical Review (ETR) is to reduce technical risk and uncertainty. ETRs provide pertinent information for DOE-EM to assess technical risk associated with projects and develop strategies for reducing the technical risk and to provide technical information needed to support critical project decisions. Technical risk reduction increases the probability of successful implementation of technical scope. In general, ETRs assesses technical bases, technology development, and technical risk identification and handling strategies.